REFERENCES

1. DeBakey M, Ochsner A: Bezoars and concretions: A comprehensive review of the literature with an analysis of 303 collected cases and a presentation of eight additional cases (Parts 1 and 2). Surgery 1938; 4:934-963; 1940; 5:132-160
2. Wortzel E, Ferrer JP, DeLuca RF: Medical treatment of the postgastrectomy bezoar: Report of four cases treated with a cellulase enzyme preparation and review. Am J Gastroenterol 1977; 67:565-569
3. Allred-Crouch AL, Young EA: Bezoars—When the 'knot in the stomach' is real. Postgrad Med 1985; 78:261-265
4. Valberg LS, McCorriston JR, Partington MW: Bezoar: An unusual cause of protein-losing gastroenteropathy. Can Med Assoc J 1966; 94:388-391
5. Deslypere JP, Praet M, Verdonk G: An unusual case of the trichobezoar: The Rapunzel syndrome. Am J Gastroenterol 1982; 77:467-470
6. Grant JA, Murray WR, Patel AR: Giant trichobezoar—An unusual case. Scot Med J 1979; 24:83-86
7. McGehee FT Jr, Buchanan GR: Trichophagia and trichobezoar: Etiologic role of iron deficiency. J Pediatr 1980; 97:946-948
8. Bernstein LH, Gutstein S, Efron G, et al: Trichobezoar—An unusual cause of megaloblastic anemia and hypoproteinemia in childhood. Am J Dig Dis 1973; 18:67-71
9. Davies IJ: Hair-balls or hair-casts of the stomach and gastro-intestinal tract. Lancet 1921; 2:791-795
10. Charache H, Polayes SH, Behr IS, et al: Trichobezoar: Report of a case of gastric trichobezoar complicated by multiple polyps with malignant degeneration of one of the polyps. Ann Surg 1957; 145:282-286
11. Hossenbocus A, Colin-Jones DG: Trichobezoar, gastric polyposis, protein-losing gastroenteropathy and steatorrhoea. Gut 1973; 14:730-732

Fatal Pneumonia Caused by Parainfluenza Type 3 Virus

LAWRENCE A. ROSS, MD
WILLIAM HITCHCOCK, MD
Los Angeles

MANIFESTATIONS OF MORBIDITY subsequent to parainfluenza virus infections in infants have recently been reported by McCarthy and co-workers.[1] Potential mortality from severe lower respiratory tract infections due to these organisms must also be considered.

From June 1986 through January 1987, parainfluenza virus type 3 was identified in respiratory tract specimens of 29 patients with symptoms of clinical disease at Childrens Hospital of Los Angeles (CHLA). During this interval, two infants younger than 3 months and previously healthy died as a result of severe injury of the lower respiratory tract presumably by this viral agent.

Reports of Cases

Case 1

The patient, a 6-week-old female infant, presented to the CHLA emergency department with rhinorrhea, cough, and congestion for one week. She was noted to be in moderate respiratory distress, and a chest x-ray film showed bilateral pneumonitis. The patient then became apneic, requiring the insertion of an endotracheal tube. Despite increased ventilatory support and the parenteral administration of ampicillin and gentamicin sulfate, she died of respiratory failure on the 15th day. Cultures of specimens of blood, cerebrospinal fluid, urine, stool, and tracheal aspirate were reported as negative for bacteria. Cultures for respiratory syncytial virus, cytomegalovirus, and *Chlamydia trachomatis* were also negative. An endotracheal tube aspirate obtained on the second hospital day and inoculated into rhesus monkey kidney cells yielded after 14 days parainfluenza virus type 3. A request for a postmortem examination was denied by the family.

Case 2

The patient, a 3-month-old female infant, was seen in the CHLA emergency department with fever and respiratory distress. A septic workup was done and therapy begun with ampicillin and chloramphenicol sodium succinate. A chest x-ray film showed bilateral interstitial pneumonitis. On the fourth hospital day, increasing respiratory distress developed, and the patient required the insertion of an endotracheal tube. Despite respiratory support, her pulmonary status deteriorated, and she died on the seventh hospital day. Cultures of specimens of blood, cerebrospinal fluid, urine, and endotracheal aspirate were negative for bacteria. Specimens from nasopharynx and endotracheal tube obtained on the fourth hospital day yielded parainfluenza virus type 3, twelve days after being inoculated into rhesus monkey kidney cells.

On postmortem examination, there was extensive interstitial pneumonitis, and cultures of specimens of lung were positive for parainfluenza type 3. In addition, acute bronchopneumonia with lung cultures positive for *Pseudomonas aeruginosa* was identified. A histopathologic evaluation did not suggest the presence of a congenital immune deficiency or an underlying cardiac abnormality.

Discussion

While parainfluenza virus type 3 is recognized as an important cause of lower respiratory tract disease, there were no deaths in the series reported by McCarthy and associates.[1] Our report indicates that parainfluenza type 3 can cause fatal lower respiratory tract disease in previously healthy infants. While the presence of an immunologic, cardiac, or pulmonary disorder cannot be entirely excluded in case 1, a complete postmortem examination in case 2 did not reveal such preexisting abnormalities.

Although the sensitivity of rapid diagnostic techniques to detect respiratory syncytial virus is considered to be at least 90%, a recent report indicates that rapid diagnostic tests to detect parainfluenza type 3 virus show poor sensitivity.[2] In addition, isolating parainfluenza viruses may require an average of more than six days,[3] which lessens the clinical impact of identifying the agent. A modification of cell culture screening methods[4] may substantially shorten the detection time.

The optimal care of infants with severe lower respiratory tract infections caused by parainfluenza viruses includes aggressive supportive measures. The availability of diagnostic techniques for detecting parainfluenza virus with enhanced sensitivity and acceptable degrees of specificity would permit the consideration of additional therapeutic methods such as the use of ribavirin[5] and the intravenous administration of immune globulin.[6]

REFERENCES

1. McCarthy VP, Carlisle JR, Reicheldeifer P, et al: Parainfluenza type 3 in newborns. Pediatr Infect Dis 1987; 6:217-218
2. Ray CG, Minnich LL: Efficiency in immunofluorescence for rapid detection of common respiratory viruses. J Clin Microbiol 1987; 25:355-357
3. Drew WL: Controversies in viral diagnosis. Rev Infect Dis 1986; 8:814-824
4. Minnich LL, Ray CG: Early testing of cell cultures for detection of hemadsorbing viruses. J Clin Microbiol 1987; 25:421-422
5. Isaacs D: Ribavirin (Commentary). Pediatrics 1987; 79:289-291
6. Hemming VG, Prince GA: Intravenous immunoglobulin G in viral respiratory infections for newborns and infants. Pediatr Infect Dis 1986; 5(3 Suppl):S204-206

(Ross LA, Hitchcock W: Fatal pneumonia caused by parainfluenza type 3 virus. West J Med 1988 Aug; 149:223)

From the Department of Pediatrics, University of Southern California School of Medicine, Los Angeles (Dr Ross), and the Division of Infectious Diseases (Dr Ross) and the Department of Pediatrics (Dr Hitchcock), Childrens Hospital of Los Angeles.

Reprint requests to Lawrence A. Ross, MD, Childrens Hospital of Los Angeles, PO Box 54700, Los Angeles, CA 90054-0700.